

Mass Storage

Flash Drives

Flash

Issues in Magnetic and Optical Systems

- ✓ Physical motion is required
- ✓ Moving Read/Write heads
- ✓ Aiming Laser beams
- ✓ All this takes lot of time in comparison with electronic circuitry



Flash Drives Technology

- ✓ Bits are stored by sending electronic signals directly to the storage medium where they cause electrons to be trapped in tiny chambers of silicon dioxide
- ✓ Chambers are able to store data for years without external power

Flash Drives Technology

- ✓ Repeated erasing slowly damages the silicon dioxide chambers
- ✓ Not suitable in place of Main memory
- ✓ Suitable where alterations can be controlled like cameras, smart phones, portable devices
- ✓ Not reliable as optical disks for long term

SSDs (Solid-State Disks)

- ✓ Larger Flash memory devices designed to take place of magnetic disks
- ✓ Quite operations and low access time
- ✓ However, costly than magnetic systems

SD (Secure Digital Memory Cards)

SD Cards

- ✓ Provide up to few GBs of storage
- ✓ Available in Smaller, mini, and Micro sizes
- ✓ SDHC (High Capacity) can provide 32 GBs
- ✓ SDXC (Extendable Capacity) may exceed to TB.
- ✓ Compact physical size, suitable for car navigation, cameras etc

Summary

Flash Memories

- ✓ Flash drives, SSDs, SDs, SDHC, SDXC
- ✓ No physical motion
- ✓ Suitable for portable devices